

Asian carp Update

USEPA – Mr. Cam Davis

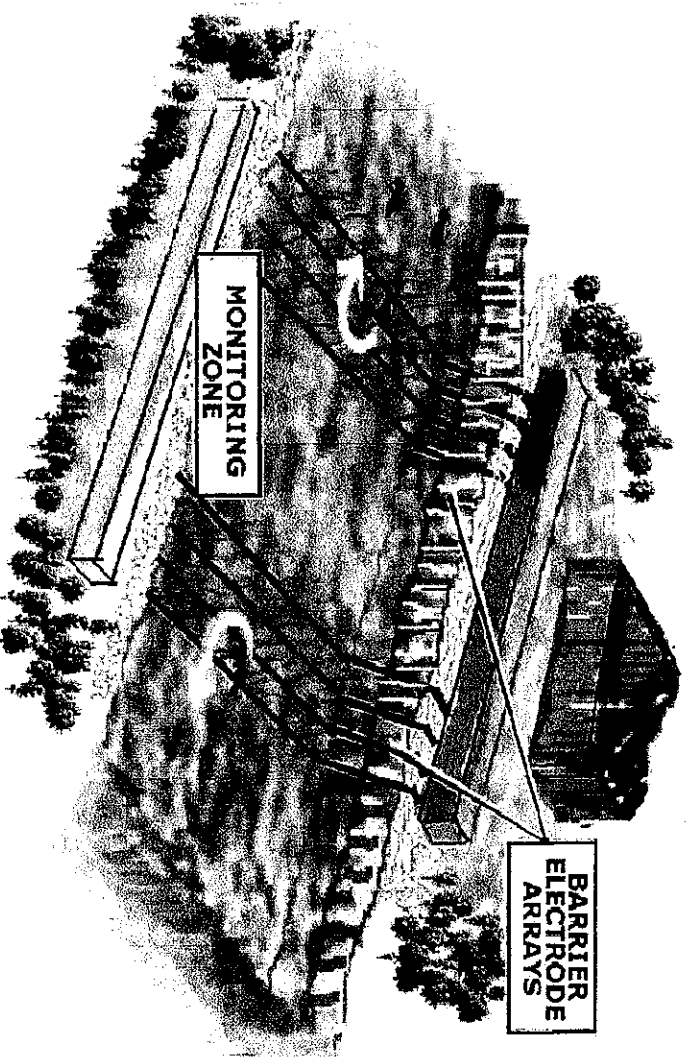
USACE – MG John Peabody

USFWS – Mr. Charlie Wooley

19 JAN 2010



Silver Carp



United States Coast Guard
U.S. Department of Homeland Security

Briefing Purpose & Outline

Purpose: Highlight recent Asian carp monitoring efforts and multi-agency migration prevention strategies.

- Multi-Agency Collaboration
- Asian carp Monitoring Update
- Multi-Agency Response Actions
- USACE Strategy for Detering Asian carp migration



Bighead Carp Recovered from
Lockport Pool 3 Dec 2009

Rapid Response Multi-Agency Collaboration

Functional Responsibility Matrix – Rapid Response

Response Section/ Agency	City of Chicago	IEPA	IDNR	Law Enforcement Agencies	MWRD	USACE	USCG	USEPA	USFWS	USDA-APHIS	Supporting Agencies**
Rapid Response Functions			●					○	○	○	○
Incident Management			●								
Operations	○	○	●	○	○	○	○	○	○	○	○
Sites (Selection, Activation, Setup, Management)			●		●						
Communications	○	○	●	○	○	○	○	○	○	○	○
Waterway Shutdown						○	○	○			
Lock and Dam Closure						●	○				
Site Staffing	○		●	○	○	○	○	○	○	○	○
EOC Staffing	○		●					○			
Liaison	○	○	○	○	○	○	○	○	○	○	○
Site Health and Safety		●	○								
Public Information and Media	○		●			○	○	○			
Site Security				●	●		●				
Resource Management	○	○	●	○	○	○	○	○	○	○	○
Science Advisory/Risk Analysis			○						●		
Offsite Environmental Impacts		○	○					○	●		
Cost/Time Tracking	○	○	●	○	○	○	○	○	○	○	○
Procurement	○	○	●	○	○	○	○	○	○	○	○

* Does not factor in weather or other unexpected event that may alter or add additional responsibilities to this rapid response.
 ** Supporting agencies include GLFC and multiple states for fisheries management agencies and Canadian provinces.
 EOC Emergency Operations Center

Legend: ○ = Support, Coordination, and Involvement ● = Primary Responsibility

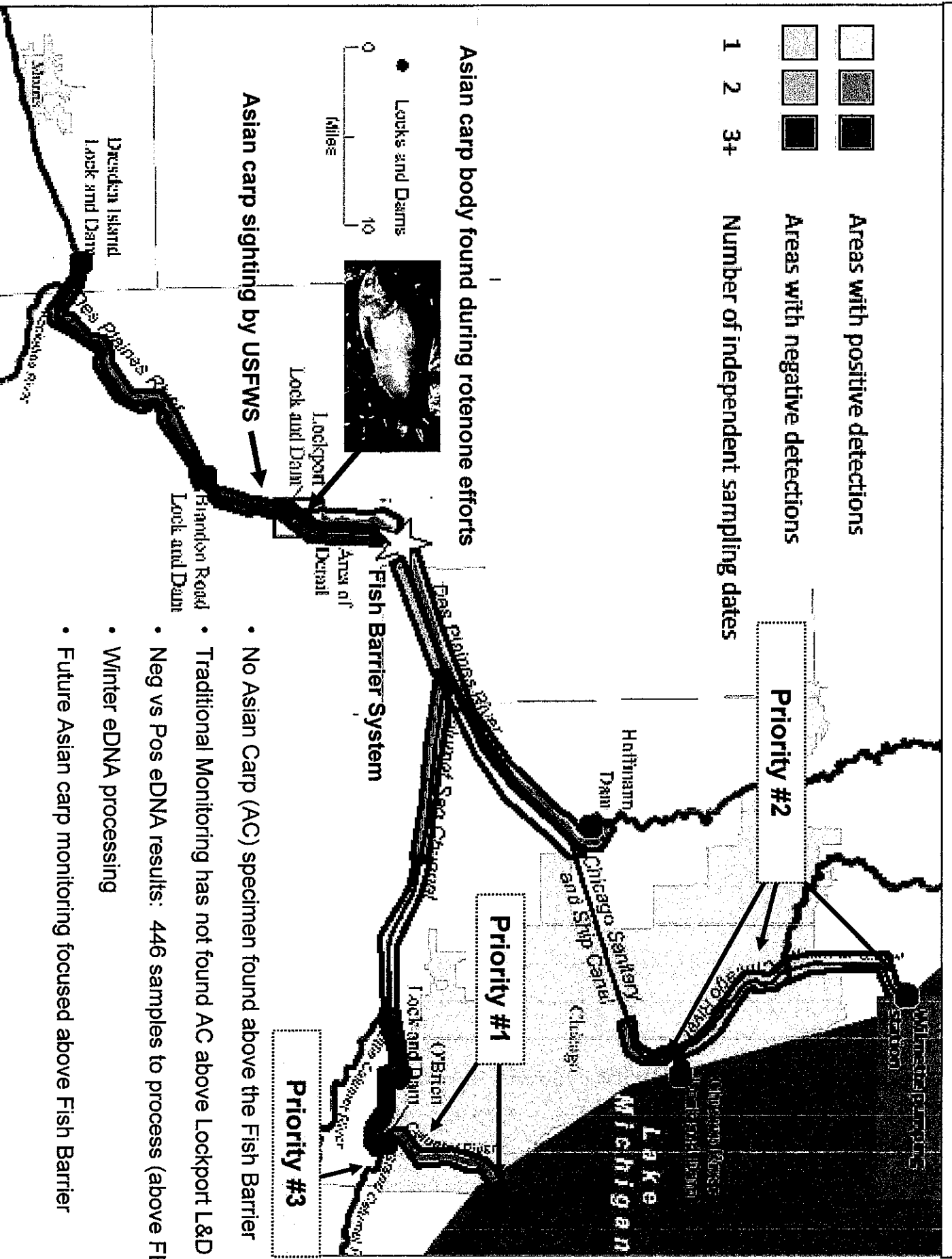
Primary Rapid Response Planning Organizations

- IL Department of Natural Resources (IDNR)
- United State Coast Guard (USCG)
- Metropolitan Water Reclamation District (MWRD)
- US Army Corps of Engineers (USACE)
- US Environmental Protection Agency (USEPA)
- US Fish and Wildlife Service (USFWS)

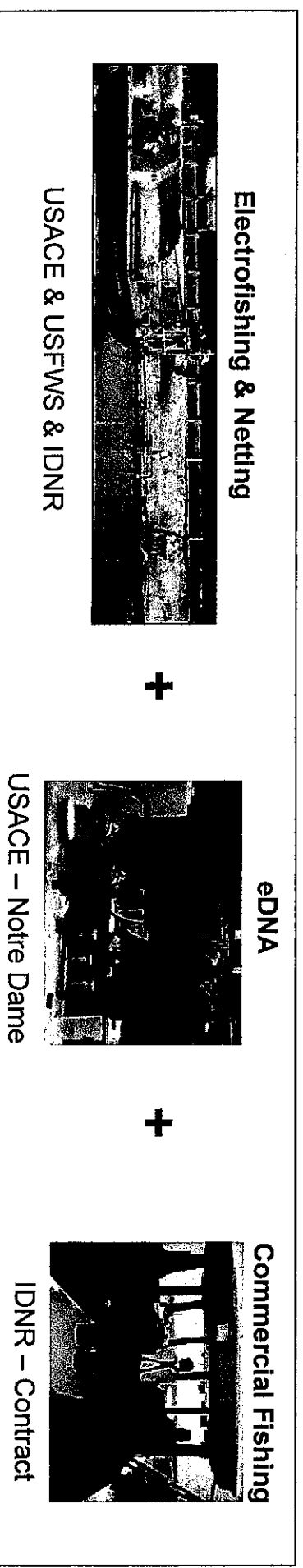
Supporting Rapid Response Planning Organizations

- Great Lakes Fishery Commission (GLFC)
- City of Chicago
- International Joint Commission (IJC)
- Midwest Generation, LLC
- Affected Counties
- Other Support State and Provincial Agencies

Fig. 1 Environmental DNA results as of January 15, 2010.



Asian Carp Monitoring Efforts



eDNA Validation Efforts



Near Term (Phases I-III)

- Phase I = Field Tests (Fishing, Rotenone & Netting)
- Phase II = Lab QC completed by EPA (Dec 2009)
- Phase III = Lab Testing (ERDC): Feb 2010
 - Confirm eDNA accuracy to detect presence
 - Test whether eDNA detects common carp/other

Longer Term (Phase IV)

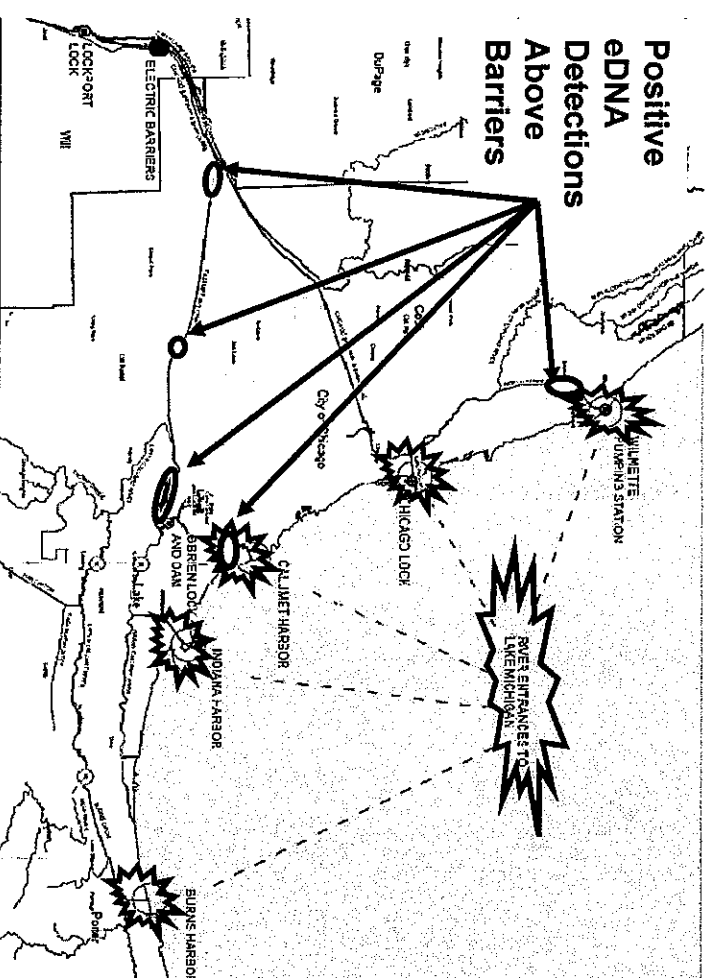
- Comprehensive Field Experiment (ERDC)
 - Will take several months (target Jun 2010)
 - Study will consider presence & population abundance

Comprehensive Plan to Address Asian Carp Migration

Short-Term (before warm weather):

- continue monitoring where winter conditions permits (All)
 - process on hand eDNA samples above Fish Barrier
 - Finalize plans to prepare for near term efforts (All)
- Near – Term (thru end of 2010):
- Track leading edge of movement (USACE, FWS, IDNR)
 - Prevent migration with barriers and other operational changes - (USACE) & rotenone (IDNR) as needed
 - Prevent fish bypass from flanking waterways (Des Plaines/I&M) (USACE)
 - Coordinate investigation of risk posed by towboat and barge ballast/bilge water (USCG, FWS)
 - Investigate new technologies/controls (DOI)
 - Nest State AIS management plans (USFWS)
 - Assessing new biological/toxicant controls (USGS)
 - Initiating public/stakeholder prevention outreach program (USFWS)
 - Competitive funding to support actions including technology development (USEPA)

Multiple Agencies Working Within Full Authorities to Fulfill Common Goal



Long-Term (2011 and beyond):

- Complete Interim Interbasin study/EIS focusing on Chicago-area access points (USACE)
- Complete Final Interbasin study/EIS (USACE)
- Screening additional measures to include secondary fish barriers (All)
- Implement chosen recommendations (All)
- Increase species-specific controls (All)

USACE Strategy for Detering AIS Migration

Jan 2010

FY10

FY11

FY12

FY13

Barrier I
Alotus
 (1) Vol 10, 11, 12, 13, 14, 15
 (2) Vol 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Asian Carp Monitoring			→
			→
- - - - - Additional eDNA Research/Efforts - - - - -			→
Continue Operation of Demo Barrier and Barrier IIA			→
Barrier IIB Built	IIB Testing		
Permanent Barrier I – Design/Build/Test (Funding Required)			
Efficacy Study	Implement Study Solutions (Authorization & Funding Required)		
Complete Optimum Parameters Research			
Construct Interim Solutions for Potential Bypasses			
Controlled Structural Ops			
Interbasin Study (Chicago Area Waterways System)			Implement Solutions →
Interbasin Study			

Impact Uncertainties

Flooding:

- Flood Damage Reduction Structures
- TARP Impacts
- Property Loss / Damage (\$B)
- Loss of Life

Public Health & Safety/EM:

- USCG/DHS/Chicago Fire & Police

Commerce / Economics:

- Transportation System Upset
- Critical Infrastructure
- Revenue Impacts
- Job Impacts

Water Quality:

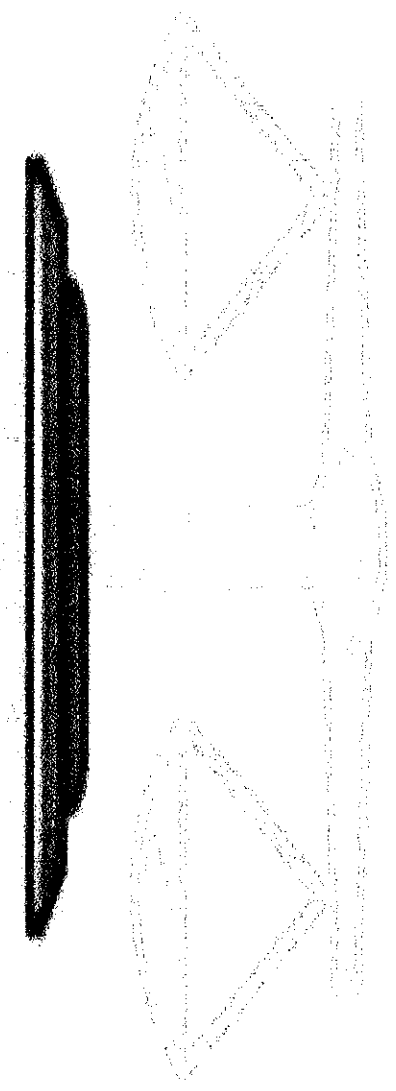
- TARP Impacts

Recreation / Tourism:

- Navy Pier
- Great Lakes Shoreline
- Great Lakes Fishing

Great Lakes Ecosystem:

- Asian Carp (AC) Adaptability
- AC Impacts to Shoreline and Tributaries
- AC Impacts to Great Lakes Fisheries (\$B)



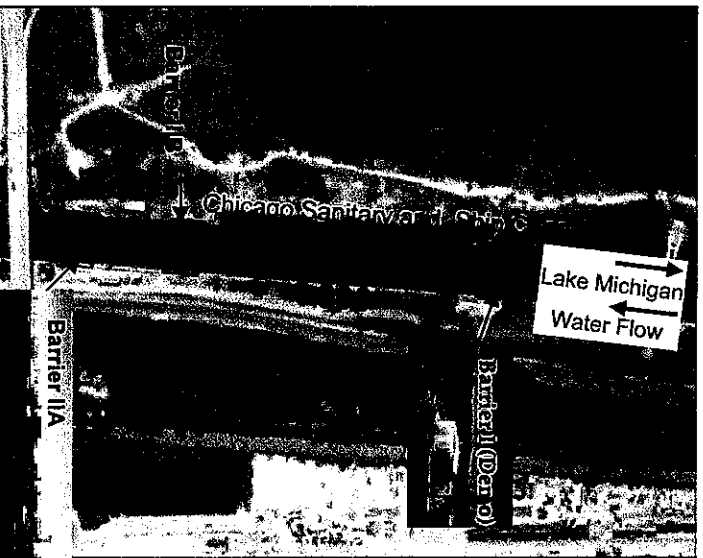
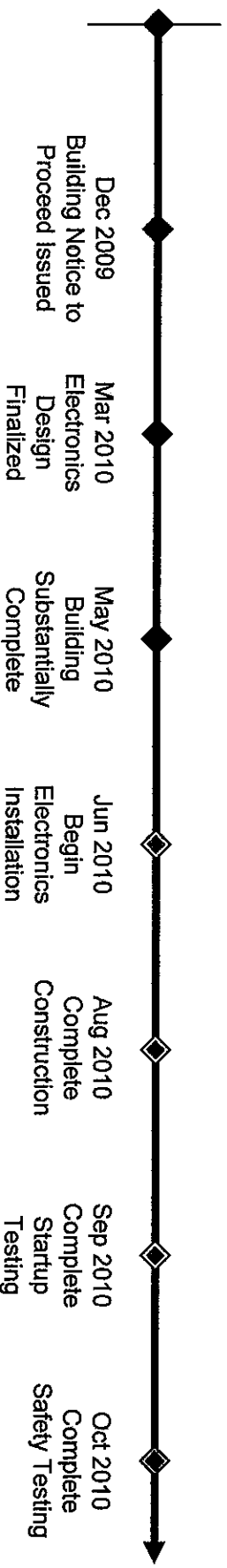
Back - Up Slides

Construction of Barrier IIB & Permanent Barrier I

30 OCT 2009

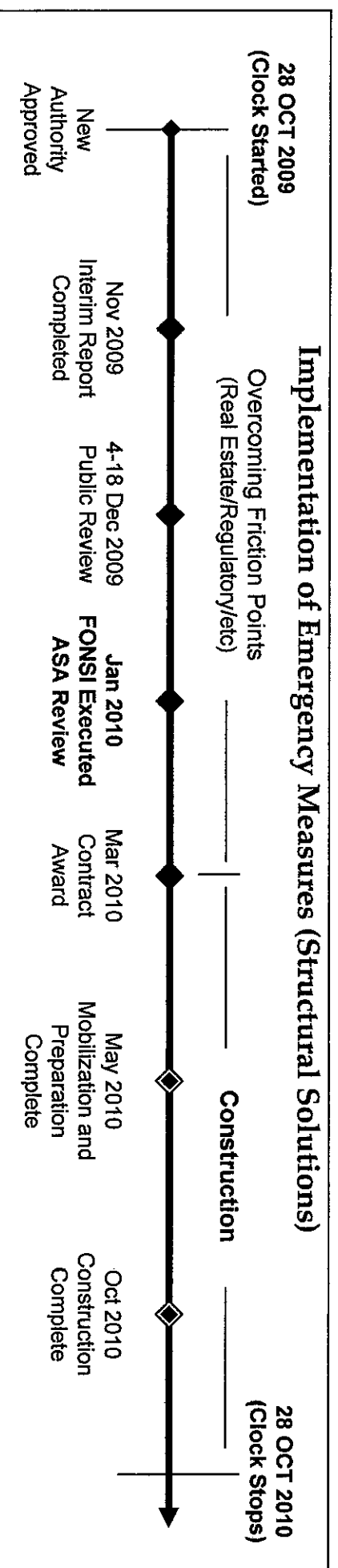
Building Construction Contract
Awarded

Construction of Barrier IIB



- IIB Capabilities: Range of Operating Parameters Same As IIA
- Improvements for Barrier IIB Vs. Barrier IIA
 - ▶ Closed-Loop Cooling System
 - ▶ All System Components Enclosed in Sealed Building
- Upgrade of Barrier I to Permanent
 - ▶ Similar to IIB
 - ▶ Initiate Once Barrier II is Fully Operational

Efficacy Study



Recommended Emergency Measures from Interim Report I

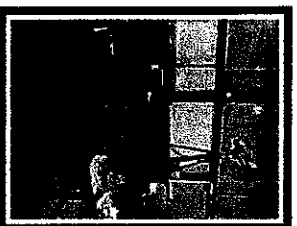
Des Plaines Structural Solutions: ~13.5 miles of structures (~7 miles of chain-link fence with ¼-inch openings & ~6.5 miles of concrete barriers at 6 different locations)

I&M Canal Structural Solutions: Block channel at location of natural flow divide

Efficacy Study - Interim Report II

Tank

Tests



Determination of Optimal Operating Parameters

- Phase A & B -- Tank testing for various combinations of technical factors. Completed DEC 09.
- Phase C -- Testing of technical factors in small flumes & swim tunnels (TBD).

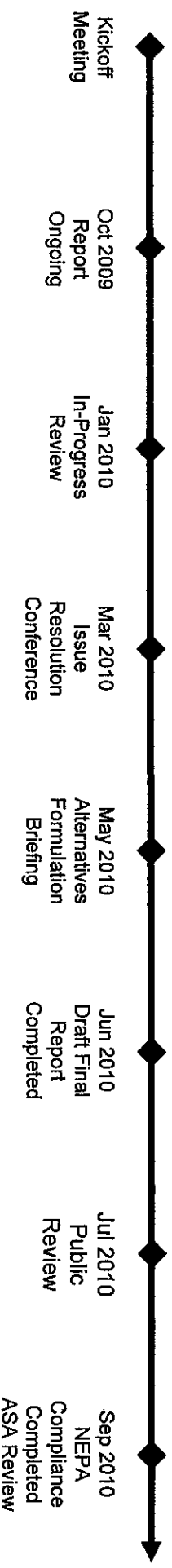
Efficacy Study - Interim Report III

Controlled Operations

- Report will consider potential controlled operations of existing structures & other actions to impede Asian carp migration before warmer weather.

Efficacy Study – Final Report

Report Timeline



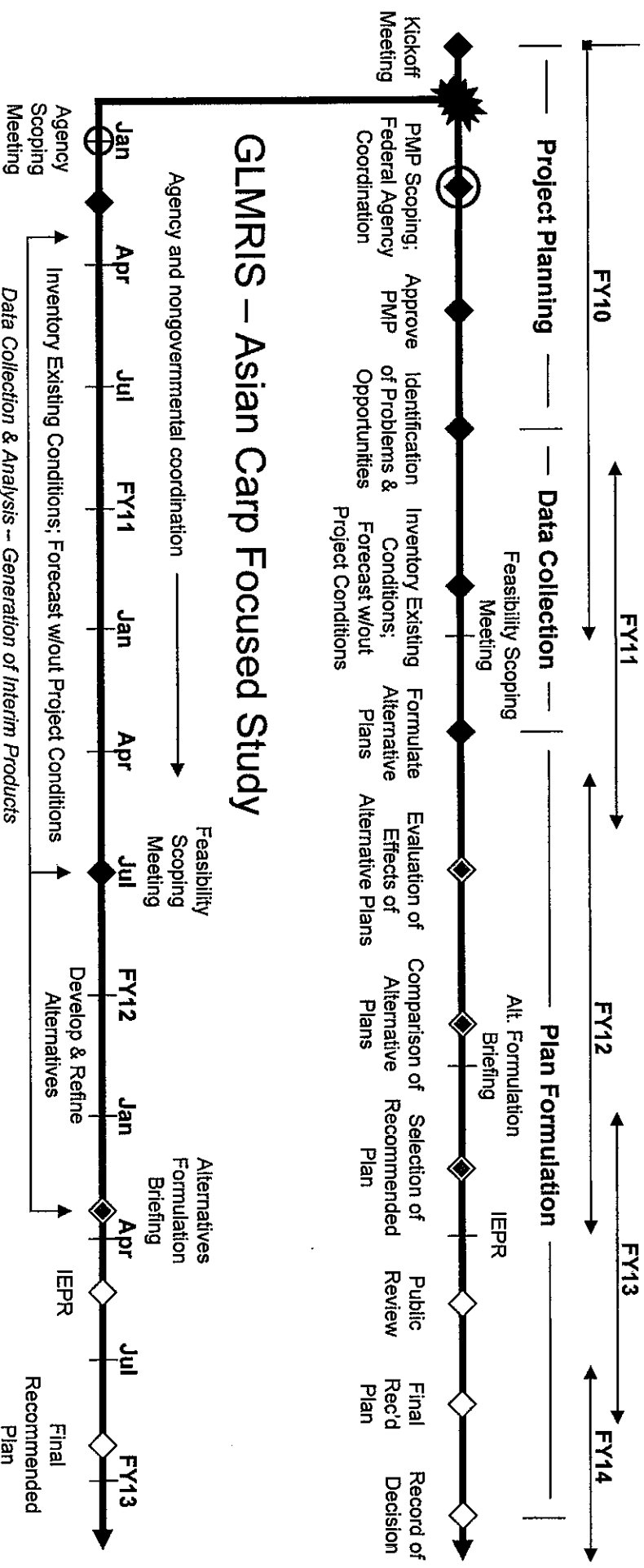
Evaluation of Other Potential Emergency Measures to Deter Migration Including:

- Other Electrical Barriers
- Other Types of Behavioral Barriers
- Review of Existing Structures (Operational Changes, Temporary Lock Closures, Dams, etc.)
- Other Assisted Transits (Ballast Water, Bait Buckets, etc.)
- Carp Population Control (Harvesting, etc.)
- Impacts (Flooding, Navigation, Recreation, Water Quality)

Implementation Challenges:

- Implementing Authority
- Funding
- Real Estate
- Regulatory
- Other Agency Support

Great Lakes and Mississippi River Interbasin Study – GLMRIS



• Baseline Assessment:

- Fisheries Survey – Value of GL Fisheries
- Environmental Modeling: Water & Air Quality
- Sustainability of Asian carp in GL
- Economic Analyses: Flood & Navigation impacts

• Challenges:

- Funding to support studies and implementation

• Partners:

- USEPA, USFWS, USCG, USGS, numerous State and local agencies and NGOs